

CLAIMS

- 5 1. A modem (1) for interconnecting a DSL line (3) and a local bus (4), which modem comprises a DSL interface (7) adapted to send and receive data on the DSL line (3) at a DSL bandwidth selected from a first set of bandwidths, and a local bus interface (8), characterized in that the local bus interface (8) is adapted to operate at a local bus bandwidth selected
10 from a second set of bandwidths so as to match the DSL bandwidth.
2. The modem according to claim 1, characterized in that each set is formed of a plurality of discrete predefined bandwidth amounts.
- 15 3. The modem according to claim 2, characterized in that the local bus bandwidth that matches the DSL bandwidth is the lowest bandwidth from said second set that has a payload data rate at least equal to that of the DSL bandwidth.
- 20 4. The modem according to one of claims 1 to 3, characterized in that the local bus interface (8) is a USB interface.
5. The modem according to claim 4, characterized in that the USB interface (8) is adapted to operate in bulk transfer mode if the DSL
25 bandwidth is below a predefined non-zero threshold and in isochronous transfer mode if the DSL bandwidth is above said threshold.
6. The modem according to one of claims 1 to 5, characterized by storage means (9) for storing data representative of at least one of a local
30 bus bandwidth amount and a DSL bandwidth amount assigned to a service accessible by said DSL line (3).

7. A method for establishing a data transfer mode for a modem (1) interconnecting a DSL line (3) and a local bus (4), preferably a modem according to one of the preceding claims, comprising the steps of

- 5 a) selecting (S9, S14, S'4, S'12) at least one of a desired DSL bandwidth and a desired local bus bandwidth from first and second sets of bandwidths according to a desired type of service to be accessed via said DSL line (3),
- b) attempting (S15, S'5) to synchronize the DSL line (3) to the
10 desired DSL bandwidth,
- c) attempting (S10, S'13) to reserve the desired local bus bandwidth on the local bus,
- d) when the attempts have succeeded, transferring data between the
15 DSL line (3) and the local bus.

8. The method of claim 7, wherein each set is formed of a plurality of discrete predefined bandwidth amounts.

9. The method of claim 8, comprising the step of (S14, S'12)
20 selecting one of the desired bandwidths based on the other bandwidth such that the desired local bus bandwidth is the lowest bandwidth from said second set that has a payload data rate at least equal to that of the desired DSL bandwidth.

25 10. The method of one of claims 7 to 9, wherein at least one of the desired bus bandwidths is selected (S9, S'4) based on a specified bandwidth amount for the desired service stored at the modem.

30 11. The method of one of claims 7 to 10, wherein step c) (S10) is carried out before step b) (S15).

12. The method of claim 11, wherein if step c) (S10) fails (S11), a lower desired local bus bandwidth is selected (S13) from the second set, and step c) (S10) is repeated.

5 13. The method of claim 11 or 12, wherein the local bus is a USB bus and if step c) (S10) fails and no lower desired local bus bandwidth can be selected from the second set, bulk transfer mode is selected (S4) for the local bus.

10 14. The method of claim 9 and one of claims 11 to 13, wherein the step (S14) of claim 9 is applied to the DSL bandwidth after step c) (S10) was successful.

15 15. The method of one of claims 7 to 10, wherein step c) (S'13) is carried out after step b) (S'5).

16. The method of claim 15, wherein if step b) (S'5) fails, a lower desired DSL bandwidth is selected (S'7) from the first set, and step b) (S'5) is repeated.

20 17. The method of claim 15 or 16, wherein the local bus (4) is a USB bus and if the desired DSL bandwidth is below a specified nonzero threshold after step b) (S'5) has succeeded, step c) is replaced by setting bulk transfer mode (S'10) for the local bus (4).

25 18. The method of one of claims 15 to 17, wherein the local bus (4) is a USB bus and if step c) (S'13) fails (S'14), bulk transfer mode is selected (S'10) for the local bus.

19. The method of claim 9 and one of claims 15 to 18, wherein the step (S'12) of claim 9 is applied to the local bus bandwidth after step b) (S'5) was successful.